Name of the Work : Improvements to Road,Drain and Footpath in Main Road and abutting Cross Roads of Maruthinagara 1st Stage in Ward No.8, Kodigehalli

Project	Name Of work : - Improvements to Road,Drain and Footpath in Main Road and abutting Cross Roads of Maruthinagara 1st Stage in Ward No.8, Kodigehalli
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/s Karthik Enterprises

AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

Proposed Use	WMM	**Date of Sampling**	**20/2/18**
Sample Location	**At plant**	**Date of Testing**	**20/2/18**

Sl. No.	**Description**		**Test No.**			**Spec Limit (%)**
			1	**2**	**3**	
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	392.00	388.00	395.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	305.00	299.00	304.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	87.00	89.00	91.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	22.19	22.94	23.04	
5	Average Aggregate impact value	(%)	22.72			Max - 30 %

Remarks : Satisfactory / Not Satisfactory

Consultant's Representative

Assistant Executive Engine
Kodigehalli Sub Division
Yelahanka Zone, B.B.M.P.
Bangalore.

Project	Name Of work : - Improvements to Road,Drain and Footpath in Main Road and abutting Cross Roads of Maruthinagara 1st Stage in Ward No.8, Kodigehalli
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/s Karthik Enterprises

AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

Proposed Use	WMM	**Date of Sampling**	**20/2/18**
Sample Location	**At plant**	**Date of Testing**	**20/2/18**

Sl. No.	**Description**		**Test No.**			**Spec Limit (%)**
			1	**2**	**3**	
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	410.00	391.00	384.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	318.00	294.00	296.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	92.00	97.00	88.00	
4	Aggregate Impact Value (%)	(Wc/Wa)* 100	22.44	24.81	22.92	
5	Average Aggregate impact value	(%)	23.39			Max - 30 %

Remarks : Satisfactory / Not Satisfactory

Consultant's Representative

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.

TEJUS
CONSULTANTS

Project	Name Of work : - Improvements to Road,Drain and Footpath in Main Road and abutting Cross Roads of Maruthinagara 1st Stage in Ward No.8, Kodigehalli
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/s Karthik Enterprises

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Type of Material	WMM	**Proposed Use**	**WMM**
Sample Location	At plant	**Date of Sampling**	**20/2/18**
		Date of Testing	**20/2/18**

Size of aggregate		**Flakiness Index**		**Elongation Index**	
Passing through IS sieve, mm	**Retained on IS sieve, mm**	**Total wt. of aggregate retained on sieves (A) gms.**	**Wt. of aggregate passing from Flakiness gauge (B) gms**	**Wt. of aggregate retained on Flakiness gauge (C) gms**	**Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms**
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	615	75	540	70
16.0	12.5	1130	125	1005	110
12.5	10.0	775	65	710	65
10.0	6.3	625	50	575	50
Total		**3145**	**315**	**2830**	**295**

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.02
Elongation Index(%):	10.42
Combined FI+EL (%)	20.44

Consultant's Representative

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.
Bangalore.

Name of Work	:	Name Of work : - Improvements to Road,Drain and Footpath in Main Road and abutting Cross Roads of Maruthinagara 1st Stage in Ward No.8, Kodigehalli
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS, Basaveshwar Nagar Bangalore
Contractor	:	M/s Karthik Enterprises
Date of Testing	:	20/2/18
Type of Mix	:	WMM
Sample I/D	:	WMM 1

GRADATION FOR WMM
(As per MORT&H 400-11)

Sample Location:	At plant	**Date of Sampling:**	20/2/18
		Date of testing:	20/2/18
Type of material & Purpose:	WMM	**Oven Dry Wt.(gms):**	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	610	610	6.10	93.90	95-100
22.4	2224	2834	28.34	71.66	60-80
11.2	1865	4699	46.99	53.01	40-60
4.75	1587.0	6286	62.86	37.14	25-40
2.36	1420.0	7706	77.06	22.94	15-30
0.6	785.0	8491	84.91	15.09	8.0-22.0
0.075	840.0	9331	93.31	6.69	0-8
Pan	669.0				
Total	10000.0				

Consultant's Representative

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.

TEJUS
CONSULTANTS

Name of Work	:	Name Of work : - Improvements to Road,Drain and Footpath in Main Road and abutting Cross Roads of Maruthinagara 1st Stage in Ward No.8, Kodigehalli
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	M/s Karthik Enterprises
Date of Testing	:	20/2/18
Type of Mix	:	WMM
Sample I/D	:	WMM 2

GRADATION FOR WMM
(As per MORT&H 400-11)

Sample Location:	At plant	**Date of Sampling:**	
		Date of testing:	20/2/18
Type of material & Purpose:	WMM	**Oven Dry Wt.(gms):**	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	362	362	3.62	96.38	95-100
22.4	2500	2862	28.62	71.38	60-80
11.2	2674	5536	55.36	44.64	40-60
4.75	1420.0	6956	69.56	30.44	25-40
2.36	845.0	7801	78.01	21.99	15-30
0.6	710.0	8511	85.11	14.89	8.0-22.0
0.075	670.0	9181	91.81	8.19	0-8
Pan	819.0				
Total	10000.0				

Consultant's Representative

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.

TEJUS
CONSULTANTS

Project	**Name Of work : - Improvements to Road,Drain and Footpath in Main Road and abutting Cross Roads of Maruthinagara 1st Stage in Ward No.8, Kodigehalli**	
Client	**Bruhat Bengaluru Mahanagara Palike**	
Consultant	**TEJUS CONSULTANTS Basaveshwar Nagar Bangalore**	
Contractor	**M/s Karthik Enterprises**	
Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)		
	Date:	**21/2/18**
Layer no. or level	WMM I layer	
Depth of hole	250mm	
Field density:	1	2
Wt. of wet material from hole (Ww) gms.	6234	6124
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9710	9750
Wt. of sand in cone (w3) gms.	835	842
Wt. of sand in hole (w4)=(w1-w2-w3) gms.	3455	3408
Bulk density of sand (γs)gm/cc	1.31	1.31
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.36	2.35
Moisture meter reading(moisture content)	12.10	12.10
Result		
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.11	2.10
MDD	2.14	2.14
OMC	13.50%	13.50%
% compaction obtained	98.53	98.13
% compaction required	98%	98%

23.08

Consultant's Representative

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.

TEJUS
CONSULTANTS

Project	**Name Of work : - Improvements to Road,Drain and Footpath in Main Road and abutting Cross Roads of Maruthinagara 1st Stage in Ward No.8, Kodigehalli**	
Client	**Bruhat Bengaluru Mahanagara Palike**	
Consultant	**TEJUS CONSULTANTS Basaveshwar Nagar Bangalore**	
Contractor	**M/s Karthik Enterprises**	
Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)		
	Date:	**21/2/18**
Layer no. or level	WMM I layer	
Depth of hole	250mm	
Field density:	1	2
Wt. of wet material from hole (Ww) gms.	6180	6250
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9714	9700
Wt. of sand in cone (w3) gms.	850	830
Wt. of sand in hole (w4)=(w1-w2-w3) gms.	3436	3470
Bulk density of sand (γs)gm/cc	1.32	1.31
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.37	2.36
Moisture meter reading(moisture content)	12.20	12.20
Result		
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.12	2.10
MDD	2.14	2.14
OMC	13.50%	13.50%
% compaction obtained	98.88	98.27
% compaction required	98%	98%

Consultant's Representative

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.

Project	Name Of work : - Improvements to Road,Drain and Footpath in Main Road and abutting Cross Roads of Maruthinagara 1st Stage in Ward No.8, Kodigehalli
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/s Karthik Enterprises

AGGREGATE IMPACT VALUE (IS: 2386 Part - 4)

Proposed Use	DBM	**Date of Sampling**	**10/03/2018**
Sample Location	At plant	**Date of Testing**	**10/03/2018**

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	392.00	372.00	378.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	296.00	280.00	275.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	96.00	92.00	103.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	24.49	24.73	27.25	
5	Average Aggregate impact value	(%)	25.49			Max - 30 %

Remarks : Satisfactory / Not Satisfactory

Consultant's Representative

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.
Bangalore

TEJUS
CONSULTANTS

Project	Name Of work : - Improvements to Road,Drain and Footpath in Main Road and abutting Cross Roads of Maruthinagara 1st Stage in Ward No.8, Kodigehalli
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/s Karthik Enterprises

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Type of Material	DBM	**Proposed Use**	**DBM**
Sample Location	At plant	**Date of Sampling**	10/03/2018
		Date of Testing	10/03/2018

Size of aggregate		**Flakiness Index**		**Elongation Index**	
Passing through IS sieve, mm	**Retained on IS sieve, mm**	**Total wt. of aggregate retained on sieves (A) gms.**	**Wt. of aggregate passing from Flakiness gauge (B) gms**	**Wt. of aggregate retained on Flakiness gauge (C) gms**	**Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms**
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	7850	680	7170	380
31.5	25.0	4256	205	3569	290
25.0	20.0	2450	270	1978	210
20.0	16.0	1568	340	1000	270
16.0	12.5	560	98	462	156
12.5	10.0	280	60	230	89
10.0	6.3	130	80	80	56
Total		**17094**	**1733**	**14489**	**1451**

Results

Flakiness Index(%):	10.14
Elongation Index(%):	10.01
Combined FI+EL (%)	20.15

Consultant's Representative

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore-560079.

TEJUS
CONSULTANTS

Name of Work	:	Name Of work : - Improvements to Road,Drain and Footpath in Main Road and abutting Cross Roads of Maruthinagara 1st Stage in Ward No.8, Kodigehalli
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	M/s Karthik Enterprises
Date of Testing	:	10/03/2018
Type of Mix	:	DBM
Sample I/D	:	DBM-1

GRADATION FOR DBM
(As per MORT&H 500-10,Grading-2)

Sample Location:	At plant	**Date of Sampling:**	10/03/2018
		Date of testing:	10/03/2018
Type of material & Purpose:	DBM	**Oven Dry Wt.(gms):**	1500.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
37.50	0	0	0.00	100.00	100.00
26.50	80	80	5.33	94.67	90-100
19.00	110	190	12.67	87.33	71-95
13.20	230	420	28.00	72.00	56-80
4.750	340	760	50.67	49.33	38-54
2.360	185	945	63.00	37.00	28-42
0.300	280	1225	81.67	18.33	7-21
0.075	180	1405	93.67	6.33	2-8
Pan	95				
Total	1500.0				

Consultant's Representative

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P
Bangalore

TEJUS
CONSULTANTS

BITUMEN CONTENT AND GRADATION DETERMINATION OF DENSE BITUMINOUS MACADAM MIX		
Name of Work	:	Name Of work : - Improvements to Road,Drain and Footpath in Main Road and abutting Cross Roads of Maruthinagara 1st Stage in Ward No.8, Kodigehalli
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	M/s Karthik Enterprises
Date of Testing	:	11/03/2018
Type of Mix	:	DBM
Sample I/D	:	DBM-1

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	835	945
2. Weight of Mixture after extraction, g	799	904
3. Weight of Bitumen	36	41
4. Weight of filter paper before extraction, g	2.00	2.00
5. Weight of filter paper after extraction, g	4.00	4.00
6. Weight of fines, g	2.00	2.00
7. Weight of Bitumen & fines	38.00	43.00
8. Bitumen content in %	4.55	4.55
9. Average Bitumen content in %	4.55	
10. Minimum Bitumen content in %	4.50	

GRADATION FOR DBM AFTER EXTRACTION

(As per MORT&H 500-10,Grading-2)

Sample Location:	At site	**Date of Sampling:**	
		Date of testing:	11/03/2018
Type of material & Purpose:	DBM	**Oven Dry Wt.(gms):**	799

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
37.50	0.0	0.0	0.00	100.00	100.00
26.50	38.0	38.0	4.76	95.24	90-100
19.00	120.0	158.0	19.77	80.23	71-95
13.20	110.0	268.0	33.54	66.46	56-80
4.750	160.0	428.0	53.57	46.43	38-54
2.360	89.0	517.0	64.71	35.29	28-42
0.300	128.0	645.0	80.73	19.27	7-21
0.075	100.0	745.0	93.24	6.76	2-8
Pan	54.0				
Total	799.0				

Consultant's Representative

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.
Bangalore

Name of Work	:	Name Of work : - Improvements to Road,Drain and Footpath in Main Road and abutting Cross Roads of Maruthinagara 1st Stage in Ward No.8, Kodigehalli
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	M/s Karthik Enterprises
Date of Testing	:	11/03/2018
Type of Mix	:	Tack coat
Sample I/D	:	1

DETERMINATION OF RATE OF SPREAD TACK COAT

Determination	Unit	Test No	
		1	2
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.780	0.748
Final weight of plate after application of tack Coat (c)	Kg	0.803	0.771
Weight of tack Coat (d=c-b)	Kg	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.256	0.256
Average	Kg/sq.m	0.256	
Specified Limit	Kg/sq.m	**0.250 Kg/sq.m**	

Consultant's Representative

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P
Bangalore.

Name of Work	:	Name Of work : - Improvements to Road,Drain and Footpath in Main Road and abutting Cross Roads of Maruthinagara 1st Stage in Ward No.8, Kodigehalli
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	M/s Karthik Enterprises
Date of Testing	:	11/03/2018
Type of Mix	:	Tack coat DBM
Sample I/D	:	2

DETERMINATION OF RATE OF SPREAD TACK COAT

Determination	Unit	Test No	
		1	2
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.768	0.774
Final weight of plate after application of tack Coat (c)	Kg	0.791	0.797
Weight of tack coat (d=c-b)	Kg	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.256	0.256
Average	Kg/sq.m	0.256	
Specified Limit	Kg/sq.m	**0.250 Kg/sq.m**	

Consultant's Representative

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.

Name of Work	:	Name Of work : - Improvements to Road,Drain and Footpath in Main Road and abutting Cross Roads of Maruthinagara 1st Stage in Ward No.8, Kodigehalli
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	M/s Karthik Enterprises
Date of Testing	:	11/03/2018
Type of Mix	:	Tack coat DBM
Sample I/D	:	2

DETERMINATION OF RATE OF SPREAD TACK COAT

Determination	Unit	Test No	
		1	2
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.768	0.794
Final weight of plate after application of tack Coat (c)	Kg	0.791	0.817
Weight of tack coat (d=c-b)	Kg	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.256	0.256
Average	Kg/sq.m	0.256	
Specified Limit	Kg/sq.m	**0.250 Kg/sq.m**	

Consultant's Representative

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.

Project	Name Of work : - Improvements to Road,Drain and Footpath in Main Road and abutting Cross Roads of Maruthinagara 1st Stage in Ward No.8, Kodigehalli
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/s Karthik Enterprises

AGGREGATE IMPACT VALUE (IS: 2386 Part - 4)

Proposed Use	BC	**Date of Sampling**	**12/03/2018**
Sample Location	At plant	**Date of Testing**	**12/03/2018**

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	398.00	392.00	378.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	301.00	295.00	290.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	97.00	97.00	88.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	24.37	24.74	23.28	
5	Average Aggregate impact value	(%)	24.13			Max - 30 %

Remarks : Satisfactory / Not Satisfactory

Consultant's Representative

Assistant Executive Engineer.
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.

Project	Name Of work : - Improvements to Road,Drain and Footpath in Main Road and abutting Cross Roads of Maruthinagara 1st Stage in Ward No.8, Kodigehalli
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/s Karthik Enterprises

AGGREGATE IMPACT VALUE (IS: 2386 Part - 4)

Proposed Use	BC	**Date of Sampling**	**12/03/2018**
Sample Location	At plant	**Date of Testing**	**12/03/2018**

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	360.00	365.00	385.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	275.00	275.00	290.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	85.00	90.00	95.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	23.61	24.66	24.68	
5	Average Aggregate impact value	(%)	24.31			Max - 30 %

Remarks : Satisfactory / Not Satisfactory

Consultant's Representative

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.

TEJUS
CONSULTANTS

Project	Name Of work : - Improvements to Road,Drain and Footpath in Main Road and abutting Cross Roads of Maruthinagara 1st Stage in Ward No.8, Kodigehalli
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/s Karthik Enterprises

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Type of Material	BC	Proposed Use	BC
Sample Location	At plant	Date of Sampling	12/03/2018
		Date of Testing	12/03/2018

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves (A) gms.	Wt. of aggregate passing from Flakiness gauge (B) gms	Wt. of aggregate retained on Flakiness gauge (C) gms	Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms
63	50	0	0	0	0
50	40	0	0	0	0
40	31.5	0	0	0	0
31.5	25	0	0	0	0
25	20	0	0	0	0
20	16	948	115	833	75
16	12.5	1135	81	1054	120
12.5	10	680	75	605	55
10	6.3	580	66	514	51
Total		3343	337	3006	301

Note: Minimum 200 Pcs should be taken on each fraction of test

		Flakiness Index(%):	10.08		
		Elongation Index(%):	10.01		
		Combined FI+EL (%)	20.09		

Assistant Executive Engineer,
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TEJUS
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Project	Name Of work : - Improvements to Road,Drain and Footpath in Main Road and abutting Cross Roads of Maruthinagara 1st Stage in Ward No.8, Kodigehalli
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/s Karthik Enterprises

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Type of Material	BC		**Proposed Use**	**BC**
Sample Location	At plant		**Date of Sampling**	12/03/2018
			Date of Testing	12/03/2018

Size of aggregate		**Flakiness Index**		**Elongation Index**	
Passing through IS sieve, mm	**Retained on IS sieve, mm**	**Total wt. of aggregate retained on sieves (A) gms.**	**Wt. of aggregate passing from Flakiness gauge (B) gms**	**Wt. of aggregate retained on Flakiness gauge (C) gms**	**Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms**
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	962	78	950	65
16.0	12.5	1300	115	1250	120
12.5	10.0	510	72	450	55
10.0	6.3	490	62	430	70
Total		**3262**	**327**	**3080**	**310**

Note: Minimum 200 Pcs should be taken on each fraction of test

		Flakiness Index(%):	10.02		
		Elongation Index(%):	10.06		
		Combined FI+EL (%)	20.09		

Assistant Executive Engineer.
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Name of Work	:	Name Of work : - Improvements to Road,Drain and Footpath in Main Road and abutting Cross Roads of Maruthinagara 1st Stage in Ward No.8, Kodigehalli
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	M/s Karthik Enterprises
Date of Testing	:	12/03/2018
Type of Mix	:	BC
Sample I/D	:	BC1

GRADATION FOR BC
(As per MORT&H 500-18,Grading-2)

Sample Location:	At plant	Date of Sampling:	12/03/2018
		Date of testing:	12/03/2018
Type of material & Purpose:	BC	Oven Dry Wt.(gms):	1200.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	125	125.0	10.42	89.58	79 - 100
9.50	80	205.0	17.08	82.92	71 - 95
4.75	220	425.0	35.42	64.58	53 - 71
2.360	150	575.0	47.92	52.08	42 - 58
1.180	135	710.0	59.17	40.83	34 - 48
0.600	120	830.0	69.17	30.83	26 - 38
0.300	90	920.0	76.67	23.33	18 - 28
0.150	75	995.0	82.92	17.08	12 - 20
0.075	115	1110.0	92.50	7.50	4 - 10
Pan	90.0				
Total	1200.0				

Consultant's Representative

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Bangalore.

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Name of Work	:	Name Of work : - Improvements to Road,Drain and Footpath in Main Road and abutting Cross Roads of Maruthinagara 1st Stage in Ward No.8, Kodigehalli
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	M/s Karthik Enterprises
Date of Testing	:	12/03/2018
Type of Mix	:	BC
Sample I/D	:	BC2

GRADATION FOR BC
(As per MORT&H 500-18,Grading-2)

Sample Location:	At plant		Date of Sampling:	12/03/2018
			Date of testing:	12/03/2018
Type of material & Purpose:	BC		Oven Dry Wt.(gms):	1200.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19	0	0	0.00	100.00	100.00
13.20	95	95.0	7.92	92.08	79 - 100
9.50	120	215.0	17.92	82.08	71 - 95
4.75	235	450.0	37.50	62.50	53 - 71
2.360	180	630.0	52.50	47.50	42 - 58
1.180	98	728.0	60.67	39.33	34 - 48
0.600	110	838.0	69.83	30.17	26 - 38
0.300	85	923.0	76.92	23.08	18 - 28
0.150	60	983.0	81.92	18.08	12 - 20
0.075	110	1093.0	91.08	8.92	4 - 10
Pan	107.0				
Total	1200.0				

Consultant's Representative

Assistant Executive Engineer,
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Yelahanka Zone, B.B.M.P.,
Bangalore.

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BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

Name of Work	:	Name Of work : - Improvements to Road,Drain and Footpath in Main Road and abutting Cross Roads of Maruthinagara 1st Stage in Ward No.8, Kodigehalli
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	M/s Karthik Enterprises
Date of Testing	:	13/03/18
Type of Mix	:	BC
Sample I/D	:	BC1

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	930	910
2. Weight of Mixture after extraction, g	878	859
3. Weight of Bitumen	52	51
4. Weight of filter paper before extraction, g	2.00	2.15
5. Weight of filter paper after extraction, g	4.10	4.00
6. Weight of fines, g	2.10	1.85
7. Weight of Bitumen & fines	54.10	52.85
8. Bitumen content in %	5.82	5.81
9. Average Bitumen content in %	**5.81**	
10. Minimum Bitumen content in %	**5.80**	

GRADATION FOR BC AFTER EXTRACTION

(As per MORT&H 500-18,Grading-2)

Sample Location:	At site	Date of Sampling:	13/3/18
		Date of testing:	13/3/18
Type of material & Purpose:	**BC**	Oven Dry Wt.(gms):	878.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	85	85.0	9.68	90.32	79 - 100
9.50	120	205.0	23.35	76.65	71 - 95
4.75	86	291.0	33.14	66.86	53 - 71
2.360	140	431.0	49.09	50.91	42 - 58
1.180	120	551.0	62.76	37.24	34 - 48
0.600	75	626.0	71.30	28.70	26 - 38
0.300	66	692.0	78.82	21.18	18 - 28
0.150	42	734.0	83.60	16.40	12 - 20
0.075	69	803.0	91.46	8.54	4 - 10
Pan	75.0				
Total	878.0				

Consultant's Representative

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Bangalore.

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BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

Name of Work	:	Name Of work : - Improvements to Road,Drain and Footpath in Main Road and abutting Cross Roads of Maruthinagara 1st Stage in Ward No.8, Kodigehalli
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	M/s Karthik Enterprises
Date of Testing	:	13/3/18
Type of Mix	:	BC
Sample I/D	:	BC2

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	910	925
2. Weight of Mixture after extraction, g	859	873
3. Weight of Bitumen	51	52
4. Weight of filter paper before extraction, g	2.00	2.15
5. Weight of filter paper after extraction, g	4.10	4.00
6. Weight of fines, g	2.10	1.85
7. Weight of Bitumen & fines	53.10	53.85
8. Bitumen content in %	5.84	5.82
9. Average Bitumen content in %	**5.83**	
10. Minimum Bitumen content in %	**5.80**	

GRADATION FOR BC AFTER EXTRACTION

(As per MORT&H 500-18,Grading-2)

Sample Location:	At site	Date of Sampling:	13/3/18
		Date of testing:	13/3/18
Type of material & Purpose:	BC	Oven Dry Wt.(gms):	859.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	85	85.0	9.90	90.10	79 - 100
9.50	130	215.0	25.03	74.97	71 - 95
4.75	90	305.0	35.51	64.49	53 - 71
2.360	135	440.0	51.22	48.78	42 - 58
1.180	98	538.0	62.63	37.37	34 - 48
0.600	65	603.0	70.20	29.80	26 - 38
0.300	40	643.0	74.85	25.15	18 - 28
0.150	82	725.0	84.40	15.60	12 - 20
0.075	82	807.0	93.95	6.05	4 - 10
Pan	52.0				
Total	859.0				

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Name of Work	:	Name Of work : - Improvements to Road,Drain and Footpath in Main Road and abutting Cross Roads of Maruthinagara 1st Stage in Ward No.8, Kodigehalli
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	M/s Karthik Enterprises
Date of Testing	:	13/3/18
Type of Mix	:	Tack coat
Sample I/D	:	1

DETERMINATION OF RATE OF SPREAD TACK COAT

Determination	**Unit**	**Test No**	
		1	**2**
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.823	0.865
Final weight of plate after application of tack Coat (c)	Kg	0.846	0.888
Weight of tack Coat (d=c-b)	Kg	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.256	0.256
Average	Kg/sq.m	0.256	
Specified Limit	Kg/sq.m	**0.250 Kg/sq.m**	

Consultant's Representative

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Name of Work	:	Name Of work : - Improvements to Road,Drain and Footpath in Main Road and abutting Cross Roads of Maruthinagara 1st Stage in Ward No.8, Kodigehalli
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	M/s Karthik Enterprises
Date of Testing	:	13/3/18
Type of Mix	:	Tack coat
Sample I/D	:	1

DETERMINATION OF RATE OF SPREAD TACK COAT

Determination	Unit	Test No	
		1	2
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.794	0.784
Final weight of plate after application of tack Coat (c)	Kg	0.817	0.807
Weight of tack Coat (d=c-b)	Kg	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.256	0.256
Average	Kg/sq.m	0.256	
Specified Limit	Kg/sq.m	**0.250 Kg/sq.m**	

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Name of Work	:	Name Of work : - Improvements to Road,Drain and Footpath in Main Road and abutting Cross Roads of Maruthinagara 1st Stage in Ward No.8, Kodigehalli
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	M/s Karthik Enterprises
Date of Testing	:	13/3/18
Type of Mix	:	Tack coat
Sample I/D	:	1

DETERMINATION OF RATE OF SPREAD TACK COAT

Determination	Unit	Test No	
		1	2
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.090	0.090
Initial Wt of empty Plate (b)	Kg	0.749	0.751
Final weight of plate after application of tack Coat (c)	Kg	0.772	0.774
Weight of tack Coat (d=c-b)	Kg	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.256	0.256
Average	Kg/sq.m	0.256	
Specified Limit	Kg/sq.m	**0.250 to 0.30 Kg/sq.m**	

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KERB STONE (CORE) TEST REPORT

Name of Work	:	Name Of work : - Improvements to Road,Drain and Footpath in Main Road and abutting Cross Roads of Maruthinagara 1st Stage in Ward No.8, Kodigehalli
Client	:	Bruhat Bengaluru Mahanagara Palike
Contractor	:	M/s Karthik Enterprises
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
No.of Sample Tested	:	3
Date of Testing	:	22/2/18
Techinical Reference	:	IS:516-1959 (Reaffirmed 1999), SP-24:1983.
Grade of Concrete	:	M_{15}

Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength
1	50.00	85.00	0.386	2312.80	1.70	0.960	28.74	14.64	15.81	15.18	18.97
2	50.00	85.00	0.382	2288.84	1.70	0.960	28.64	14.59	15.75	15.12	18.90
3	50.00	85.00	0.386	2312.80	1.70	0.960	28.68	14.61	15.78	15.14	18.93

Note:

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2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported reported within 90 days from the date of testing.

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KERB STONE (CORE) TEST REPORT

Name of Work	:	Name Of work : - Improvements to Road,Drain and Footpath in Main Road and abutting Cross Roads of Maruthinagara 1st Stage in Ward No.8, Kodigehalli
Client	:	Bruhat Bengaluru Mahanagara Palike
Contractor	:	M/s Karthik Enterprises
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
No.of Sample Tested	:	3
Date of Testing	:	22/2/18
Techinical Reference	:	IS:516-1959 (Reaffirmed 1999), SP-24:1983.
Grade of Concrete	:	M_{15}

Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correcti on factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correctio n Factor for the Dia. (Strength	Corrected Cylinder Compressiv e Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	50.00	85.00	0.385	2306.81	1.70	0.960	28.40	14.46	15.62	15.00	18.75
2	50.00	85.00	0.378	2264.87	1.70	0.960	28.60	14.57	15.73	15.10	18.88
3	50.00	85.00	0.374	2240.90	1.70	0.960	28.41	14.47	15.63	15.00	18.75

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